



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/538,844

06/13/2005

Brent Walworth

4702-18

7502

23117

7590

09/01/2009

NIXON & VANDERHYE, PC  
901 NORTH GLEBE ROAD, 11TH FLOOR  
ARLINGTON, VA 22203

EXAMINER

SASAKI, SHOGO

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

09/01/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/538,844	<b>Applicant(s)</b> WALWORTH, BRENT	
	<b>Examiner</b> Shogo Sasaki	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-21 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-21 and 23-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Claims 1-12 were previously cancelled. Amendments to the claims and to the specification are acknowledged. Cancellation of claim 22 is acknowledged. The new drawing filed on 6/1/2009 is also acknowledged.

#### ***Claim Objections***

2. Regarding claim 23, it is noted that the recitation “for controlling the mass flow of catalyst to a polymerization reactor” merely recites the purpose or the intended application of the process of claim 13. The recitation has no patentable weight. In addition, claims 23, 24 and 26 are directed to a method, however, they do not further limit the process because they do not add any additional steps; and they do not further limit any previously claimed steps.

3. Regarding claims 24 and 26, the recitations of “a polymerization reactor” and “a continuous polymerization reactor” render said claims unclear. It appears that these reactors are the reactor of claim 23. It is suggested to replace “a” with “said.” The same applies to the recitation “catalyst.” It is suggested to add “said” before “catalyst.”

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 13-21 and 23-26 rejected under 35 U.S.C. 102(b) as being anticipated by CELANESE Corp (GB 896,786).

Regarding claims 13-21 and 23-26, CELANESE Corp discloses a process for providing a flow of particulate matter to a reactor comprising:

Art Unit: 1797

- intermittently adding said particulate matter and a diluent to a mixing tank (page 1, line 16-25, a zone = Fig. 1, 22; and page 1, line 85-page 2, line 1, surge tank = Fig. 1, 22);
- continuously withdrawing a slurry of said particulate matter in said diluent from the mixing tank for introduction into the reactor (page 1, lines 54-60, the reactor = Fig. 1, 26);
- wherein prior to each addition of said particulate matter and said diluent to the mixing tank, the concentration of said particulate matter in said diluent already in the mixing tank is measured or calculated (The volume of slurry in the zone/tank is monitored by the level control 30 in Fig. 1: see page 3, lines 27-29. The catalyst feeder/hopper is equipped with a metering device: page 1, lines 75-84; and page 3, lines 101-105. The concentration of the catalyst in the zone/tank is easily measured or calculated. This is the same method as disclosed in the instant application; page 3, lines 18-20 and lines 26-29; and page 8, line 2- page 9, line 9);
- the amount of said particulate matter and said diluent subsequently added is measured so as to achieve the same concentration at the end of the addition as that measured or calculated prior to the addition (page 1, lines 25-43; and page 1, line 85-90);
- wherein said particulate matter is a catalyst; (page 1, lines 11-15);
- wherein measurement of the amount of said particulate matter and said diluent added to the mixing tank is carried out before any of said diluent is added to said particulate matter (The catalyst and the diluent are added separately [page 1, lines 16-25; and Fig. 1]. Thus the desired concentration (measurement) of the catalyst must have been known in advance.);
- wherein diluent and particulate matter are added to the mixing tank separately ([page 1, lines 16-25] A powdered catalyst added to a zone [Fig. 1, 22] up stream of a reactor [Fig. 1, 26], and then a liquid is added to the zone [via 28 in Fig. 1: See page 3, lines 21-25]);

- wherein some or all of said diluent is used to flush the measured amount of said particulate matter into the mixing tank ([page 1, lines 16-25] A powdered catalyst is added to a zone [Fig. 1, 22] upstream of a reactor [Fig. 1, 26], and then a liquid is added to the zone [Fig. 1, 28; and page 3, lines 21-25]. The powdered catalyst in the inlet must have been flushed in to the zone with the liquid [see a specific example: page 3, lines 113-116]);
- wherein the concentration of said particulate matter in said diluent is calculated using measurements of the volume or mass of said diluent in the mixing tank, and the mass of said particulate matter added to the mixing tank (The volume of slurry in the zone/tank is monitored by the level control 30 in Fig. 1 [see page 3, lines 27-29]. The catalyst feeder/hopper is equipped with a metering device [page 1, lines 75-84; and page 3, lines 101-105]. The concentration of the catalyst in the zone/tank is easily measured or calculated. This is the same method as disclosed in the instant application [page 3, lines 18-20 and lines 26-29; and page 8, line 2- page 9, line 9]);
- wherein said particulate matter is first measured into a feed pot (Fig. 1: 17, a conveyer), which is subsequently emptied into the mixing tank (page 2, lines 114-125);
- wherein said particulate matter is discharged into the feed pot from a vessel, and the amount measured into the feed pot is determined by weighing said vessel (The vessel appears to be same as the tank 10 in instant application. In the prior art, the capacity of the catalyst/diluent slurry is maintained in a predetermined limit or constant [page 1, lines 25-43; page 1, line 85-90; and page 3, lines 21-29]. If the volume of the slurry is known, then effectively the weight of the slurry in the vessel is known);
- means for measuring the mass flow of said particulate matter and said diluent out of the mixing tank to the reactor (The catalyst feeder/hopper is equipped with a metering device [page 1, lines 75-84; and page 3, lines 101-105]. The diluent supply is monitored [page 3, lines 108-110]. The input of the catalyst and the

Art Unit: 1797

diluent are metered, and the capacity of catalyst/diluent slurry is maintained in a predetermined limit or constant [page 1, lines 25-43; and page 1, line 85-90], thus effectively the invention of CELANESE Corp is metering the out put of the slurry);

- for controlling mass flow of catalyst to a polymerization reactor (page 1, lines 16-25); and
- wherein the particulate matter is a polymerization catalyst (page 1, lines 11-15).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over CELANESE Corp (GB 896,786).

Regarding claims 24 and 26, CELANESE Corp discloses all of the limitations as set forth above.

CELANESE Corp does not explicitly disclose wherein the mass flow of catalyst to a continuous polymerization reactor varies by less than 10%, or less than 5%, during

filing of the mixing tank. However, CELANESE Corp teaches that the rate of feeding the catalyst is determined by the needs of the reactor and the variation in the rate of feeding the solvent thus determines the concentration of the solid catalyst slurried in the solvent during passage to the reactor (page 2, lines 8-14).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to set the variation between 5-10%, since where the general conditions of the claims are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

### ***Response to Arguments***

9. Applicant's arguments filed 6/1/2009 have been fully considered.
10. The objections to claims 13, 15, 16, 17, 18, 20 and 21 are withdrawn.
11. The objections to claims 23 and 24 are maintained. See paragraphs 2 and 3. Claim 26 is additionally objected.
12. The 112(2) rejections of claims 14, 20, 23 and 24 are withdrawn.
13. Applicant's arguments (page 9-10) with respect to the prior art rejection have been fully considered but they are not persuasive.

In response to page 9, second and third paragraph, examiner asserts that the term "intermittently" does not define a specific time interval between a step of adding and a step of stopping said addition. Said term also does not define what is done to the particulate and the diluent prior to the step of addition; and what is done to the next batch added subsequent to the first addition, which are described in the wherein clause of claim 13.

The mixing tank disclosed in the prior art has a limit in the amount of particulate-diluent mixture it can take. The volume of liquid in the tank is also maintained at a certain level (page 1, lines 25-43) with a level alarm (page 3, lines 25-30). Stopping the addition of the diluent and the particulate at one point, in the industrial process disclosed, is inherent. The prior art may disclose that the mixture may be added continuously to the tank for a particular time, but the prior art does not say that the two

are added endlessly. The step of adding and the step of stopping the addition is inherently disclosed by the prior art.

### ***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shogo Sasaki whose telephone number is (571)270-7071. The examiner can normally be reached on Mon-Thur, 10:00am-6:30pm, EST.

16.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Application/Control Number: 10/538,844  
Art Unit: 1797

Page 8

SS

8/28/2009

/Brian R Gordon/

Primary Examiner, Art Unit 1797